Main Currents IN MODERN THOUGHT

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$4 a year, actual cost. Many elect to contribute more. Volunteers to digest journals are invited. All are read retroactively as from October 1st, 1940 to ensure complete coverage. An index of contents will appear annually, summaries & basic bibliographies occasionally. Main currents, as we conceive them, are on page one of November, 1940, issue. For meaning of colors, please see January, 1941, issue.

FROM INSTINCT TO THE INTELLIGIBLE WORLD

A Note on Integration

What are the assumptions we must make in order to integrate the several categories of human experience, science and the arts, philosophy and religion ?
1. The universe is an organism, and biological thinking must take priority over physical science and psychology as basic process. 2. The superphysical is real, time-like, complex, causal. 3. Man's self-consciousness is evidence that his position in that complex is special; his psychology is something more than animal.
4. The rich soul-potential in him, associated with this self-consciousness, is that which projects itself as human history. These assumptions are not many, and all of them can be readily defended with fact. The first is increasingly commonly found in contemporary writing. It is the second, which gives validity to the last two, which has not been faced up to. Some thorough thinking about the nature of time in physics, time in biology and time in psychology is long overdue. Integration of this one crucial topic as it is treated in several departments of learning would help provide in turn to provide authority for over-all integration. The careful engagement of the first unit of the zipper makes the rest of the series of isolated hooks engage smoothly.

The vitalistic thinking required must be such as can incorporate solar systems and similar organisms into the unified picture. In other words, life must now be defined broadly enough to take up its role as a great philosophical standard of measure. Why should not life be regarded as that which is capable of assembling matter so that any special combination of materials will be revealed by a special form ? Each unique form has also particular properties---especially psychological properties---special to it. When life is defined as that which is protoplasmic we stultify our inquiry. We must make a final break with chemical definitions some time or other. If we propose to find out what life is we must refuse to get bogged down in chemistry. Let us start with life's basic property, capacity for the formation and display of selves, self-formation. This admits the crystals to our definition, no doubt, and thus is a break with the past. But we now have a definition which allows us to classify new data (such as the viability of the crystal of the tobacco plant mosaic virus) as such data comes along.

We then go on to say that there is no biological organism not connected with a psyche of its own---a psyche as much a part of the real superphysical realm as the body of the organism is part of the physical realm. We may conceive the psyche as interstitial to the molecules of the organism. Minerals express the properties of space and provide thus the barest psychology of simple being. This is psychology stripped down to the minimum, mere identifiable personality, as we see in the uniqueness of each snow crystal or diamond. Of this simplest personality or self we can certainly say something superphysical is causative. Is there anything more superphysical than pure space properties which combine with electro-atomic properties to make the crystal unique, a self ? At present we can peer only imaginatively into this inter-atomic space to wonder about the psychic forces at work, here in the crystal pre-stated in bare form and worked out with new psychic wealth in the cellulose and then in the protozoic cell.

With this basis laid down the transfer of our thought from biology to human psychology becomes easy. Man is seen as a psycho-physiological organism in which there are new developments in the psycho-spiritual sector, not hitherto revealed by simpler creatures. But his powers are a perfectly natural consequence of the steady increase of psychic potential as we go from bare being and space in crystals up to those new space explorations and new time and psychic strivings in compound plants, and so on through the metazoa with their still freer explorations of space (being mobile), their keener psychic life and much more remarkable trafficking with moon, sun and the stars in their temporal courses. Man is the last word in such time-trafficking, and he is more. He touches, in the continuity witnessed in his self-consciousness, the next kind of super-physical world beyond that of animal restless psychic going on. He is inwardly in touch with the realm of duration even if he is but an atom (as Liebnitz saw) in that strange world of even deeper causality than psychic striving.

It is true that this transfer from psyche (anima) to soul (animus) in man opens up almost breathless vistas in psychology. But if we really mean to integrate thought we must expect and indeed welcome domains large enough to take in all experience. Room must be made for mystical experience, recorded instances of perception of the future, and other evidence in parapsychology which shows that man shares that time sector we call psyche with lower creatures but has also occasionally access to a superior time-sector also. Recognizing man's lodgement in this superior realm with a world-soul connotation, we provide not only for history but for the larger subject, anthropology. The Promethean is the true picture of man. Chained high on the spiritual eminence, which he has ascended but not conquered, he is assailed by the vultures of animal desire which eat at the ever-renewed psyche.

As man grows within against the abrading experience without he projects himself in what we call history. His palaeo-historical deposits are archaeology, but his history runs back further into time and epochs without records save the myths. Thus history, archaeology and anthropology become understandable because man is both an animal psyche and a human soul. Anthropology turns out to be something larger than the science of cracked and empty skulls. We are prepared for undiscovered cycles of a biological character in racial history, as Spengler and van der Leeuw perceived.

Economics, religious experience, artistic needs, educational standards----all the doings and needs of man now get a new and more worthy authority. For they derive from law, not human notions, or deistic whims. And entirely new way of going about living comes to light for social man today. From biology we have ready at hand that aspect of nature called instinct. Instinct has become old-fashioned, abandoned because it had no philosophical meaning to physics. Instinct now, in this new view, starts with bare space-disposal laws of atom relations in crystals (affinity) and goes on as feeding in a colony of vorticella, the hunt in amoeba proteus and so on upward. When we arrive at man, remembering his inward uniqueness as soul above psyche, we are not surprised to find instinct emerge as intuition. The supremacy of that which we call logic fades, and something nearer to life and art and beauty and values takes its place. Intuition is as valid for life as logic is for matter. Intuition can resist the half-true intellectualisms of undeveloped man today, since it more or less vaguely guesses the unknown future from its vantage-ground in the center of the soul.

Thus armed by biological thought we are ready to evaluate our most characteristic physical sciences. We have all long ago perceived that the matter sciences have no moral standards. They fumble in darkness. They adventure and explore but cannot seek by plan. Their progress is slow and their processes wasteful; much of their advance is due to mistakes. Such science needs the guidance of philosophy. Physical science suggests that the universe is patently a unified system. What links are missing in our physical sciences then, what is wrong with positivist thinking, that we cannot trace this unity throughout ? The answer is plain: the rejection of those special features of life, instinct and intuition, as valid and developable processes.

Curricular philosophy, largely physical-science dominated, has formerly assumed that mental processes will provide final answers, because intellect (in man) is taken to be the highest achievement in evolution. The most recent was presumed to be the nearest to truth. Mathematics was the ideal.

Some justification was apparent for this attitude so long as mathematics seemed merely logical. And undoubtedly the reach of mathematics into the heart of things is long. But it turns out that mathematics is at bottom an intuitive processes. Only its secondary procedures are logical, and its results are really no better and fit the world no better than its intuitive bases allow. Before Bolyai, Lobatchevsky and Riemann had shown the results of turning our backs on the assumptions made by Euclid about parallel lines, geometry was an inadequate system. When the non-Euclidean postulates were made and the resulting systems carried to their logical ends, new and important explanations of the objective world had been created. Today we believe cosmic space-time to be Riemannian-spherical.

If, then, mathematics reaches far it is because of basic extra-logical or intuitive truths. From all this it follows that the intuitions must be defined and used. It means also that no cultural system will be much good which has not united art and science, religion and philosophy by means of intuitive insight into processes common to them all. It means also the educational structure wants stripping to its elements and a fresh start made. There is a valid metaphysics, but it is not attainable by reason alone, however good in itself, if based on poor intuitions. For true metaphysics, involves the closest scrutiny of the use of words and relations of mind to language so that we can escape to a supra-logistic realm where the principles of music and the principles of mathematics will be unifiable. In short, we may anticipate the existence of an intelligible world as far superior to simple intuition as intuition is superior to instinct and that to affinity.

Such seem the consequences, however badly we have expressed them, of taking it once and for all that biology is the best thinking, that the superphysical connotations are inescapable, and that man is high up in an ascending scale of psycho-spiritual structures, even now thus early in his evolutionary course. Upon this integrated basis a new educational practice can be set up. The youngster can be taught the basic patterns in nature, the great classes of her goemetric forms, the relatively few chemical elements, the essential properties of the various states of physical matter, the classes of crystals, the space lattices, the undeniable order in plant and animal taxonomy. In short, all that pertains to order and beauty can be his from the earliest years. When he arrives at college age he will be saturated with order. He will have been brought up on life and love and beauty, and not matter, ugliness and death. He will be ready to live, not just earn a living, in a society which acknowledges his right to live.

F. K.

LIFE AND TIME

A wasp nest fossil dated back to about 80,000,000 years and contemporary with the dinosaurs, has been put on view at the Smithsonian Institute. A picture is in Time, February 24, 1941. The early appearance of insects useful for pollination of flowering plants is well known. The actual sight of the admirable symmetry of their nests, unchanged in all these years, impresses anew on the observer the association of life forces with whatever it is in the superphysical or hyperspace worlds in superior relation to that which we call time. A good photograph of a bat skeleton dating back about sixty million years is in Time of January 6, 1941.

F. K.

To the Editor:- What is the accepted opinion with regard to such abstract qualities in human personality as ambition, a sense of responsibility, egotism and patience? Can they be connected with any particular gland or portion of the brain? What are the latest observations on emotions in general such as anger and joy? Please send references. M. D., Mississippi.

ANSWER:- Human personality is best understood and evaluated in terms of the psychologic and biologic components that make up each individual. There is a healthy growing tendency to talk in terms of psychobiology. Evaluation of personality factors in these terms not only recognizes the factors contributed by the underlying cerebral structures and patterns but also considers the general body action and psychologic training.

There are of course certain areas of the brain in which special functions are concentrated, as for example the motor speech area. Also it is known that the hypothalmic area is the important center that controls many vegetative functions. The thalmic areas are concerned with feeling tone or the effective component of action. Not only does a man who gets angry have increased secretion of epinephrine, increased blood sugar and many other physiologic changes, but also it must be emphasized that the psychologic conditioning that induces the anger is part of the individual's reaction pattern. Anger therefore has psychologic and biologic components.

The following references are recommended to elucidate this psychobiologic point of view:

The Interrelationship of Mind and Body, A. Research Nerv. & Ment. Dis., Proc. (1938), 1939, vol. 19.
Myerson, Abraham: The Inheritance of Mental Disease, Baltimore, Williams & Wilkins Company, 1925.
Cannon, W. B.: The James-Lange Theory of Emotion: A Critical Examination and an Alternative Theory AM. J. Psychol. 39:106, 1927.
Studies on Cortical Representation of Somatic Sensibility, Harvey Lectures, 1937-1938, Baltimore, Williams & Wilkins, 1938.
Hooker, Davenport: Early Fetal Activity in Mammals, Yale J. Biol. & Med. 8; 579 (July) 1936.
Meyer, A.: Problems of Mental Disorder, New York, Macmillan Company, 1934.
Dunbar, H. F.: Emotions and Bodily Changes, New York, Columbia University Press, 1938.
Karin, Stephen: Psychoanalysis in Medicine, New York, Oxford University Press, 1935.
Billings, E. G.: A Handbook of Elementary Psychobiology and Psychiatry, New York, Macmillan Company, 1939.

[The foregoing is from the Jour. of the Am. Med. Assoc., March 1, 1941. It is rare to find anything even as cautious as this there, so we print the whole. It would help the "healthy growing tendency" if a constant vitality were given to psychobiology by raising repeatedly in the Jour. of the A.M.S. the question of the separate reality of the psychic, the possibility of human personal survival, merely for discussion purposes. If Nature (Macmillan) can do so, surely the medical journals may ? K. H.-F. K.]

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WHAT IS NEURITIS? John McDowell McKinney

Simply neuritis means inflammation of a nerve. There are many forms of neuritis, ranging from 'tic douloureux', which is frequently relieved only by severing the nerve, thru those forms caused by (1) poisonings of lead, arsenic, alconol; (2) tumors pressing on a nerve; (3) diabetes; and (4) deficiency diets, to mention only a few.

Causes of neuritis or neuritis-like pain frequently encountered and most frequently misdiagnosed are worry, fear, unhappiness, and emotional distress. Under the stress of unhappiness or worry the muscles of the neck, shoulders and back are unconsciously held tense and rigid. This is sometimes kept up for days, causing these muscles to become sore. Then either by direct pressure on a nerve, or by interfering with the blood supply to a nerve, a neuritis will be set up. In these cases the emotional distress of the patient must be treated.

There is also such a thing as the organic expression of the emotions of unhappiness, fear, and disappointment, such as the actual feelings of being heartbroken, or of great fear causing us to have no stomach for a thing. These feelings seem to be centered in actual parts of the body, the sensations being painful and real. They are more painful when we have attempted to blot out the cause of our distress because we feel it is useless to dwell on it further. When we have been particularly successful in blotting out the cause of our suffering, the heart or stomach pain is unbearable and we then forget the original cause and cast about for some organic disease such as cancer, stomach ulcers, heart disease, etc. as the seat of our trouble. Cures can be effected with a thorough understanding of the background of these cases. (Hygeia, March, 1941, pp. 190-191, G. B.)

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A study of Kamala, the Wolf Girl, an infant child stolen by a wolf and reared in its den for five years before being recaptured and reconverted from near animalism to human characteristics, by Dr. Robert M. Zingg, Univ. of Denver anthropologist (previously reported in Main Currents) leads to the conclusion that "while the normal baby is born with the potentialities to become a human being, in the form of a more complicated nervous system than that of animals, man actually attains this only through association with his kind in the very earliest years. Deprived of this too early or too long or too severely, the human child never recovers complete mastery of the upright position of man, or of language, or a complete and fully developed human personality. Yet the environment factor is not supreme. Both the environmental and hereditary factors unite in a complex interplay to develop the human being. (New York Herald Tribune, March 2, 1941 A. J. P.)

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FOOD AND INFANTILE PARALYSIS

"Food has been suggested as a possible weapon against polio. Very little is known at present about the relation of nutrition to infantile paralysis or other virus-caused disease, so a grant of $37,500 was made by the National Foundation for Infantile Paralysis to the School of Medicine, of the University Texas to investigate this angle. (SCIENCE, January 17, 1941. R. S.)

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Interesting and informative:-- "The Anatomy of Prejudice", pp. 3-12, Common Ground, Winter, 1941, by Henry A. Davidson, psychiatrist to the Union County, N. J. Domestic Relations Court.

PSYCHOLOGY AND THE SUPERPHYSICAL — A Draft Basic Bibliography

(The following is the first of a series of brief bibliographies prepared with the idea of lifting crucial topics out of narrowly academic form, listing works which in turn provide new avenues for thought, and calling attention to books not widely known. Nothing doctrinaire is behind the selecting. An uncritical eclecticism has also been avoided. An equal accent on authors and individual books is maintained. The idea is that a person acquiring these books will have the nucleus for the topic: What evidence is there in psychology for the reality of the superphysical ? Biology and the physical sciences in relation to the reality of the superphysical will be treated separately later. Reader's suggestions are invited. F. K.)

Spiritual and ethical issues depend upon the acceptance of the reality of life and consciousness in what may be called superphysical conditions, that is, in other states that this familiar one of waking life. Faith is always important, and especially in times such as this, when it constitutes what drive there is toward good conduct. But a true peaceful culture waits upon the fortification of belief by knowledge, especially objective knowledge. This basic bibliography points to such knowledge in the realm of psychology.

Objective evidence may not be the best, for the patent reason that if other worlds or states exist they will be necessarily what we call subjective. Therefore the best evidence for them, and the best means of experiencing them will be subjective also. All the same objective study is important, because of the confidence most people have that the universities are bound to know about anything that can really be known; and the universities emphasize the importance of objective evidence.

It is desirable to bring out sharply this situation about the prestige of the colleges. They do not teach the student about the reality of the superphysical, or the survival of man after so-called death. Is this because there is nothing certain to be known ? No, the colleges (even many theological colleges) are not fitted to pronounce on this matter, because they do not integrate knowledge. In the physics department one may see conclusive experiments that show electromagnetic phenomena (light) go on when solids, liquids and gases are nearly completely excluded. But the possible relation of this fact to (say) para-psychological evidence of human survival of death is not made for the student.

Why is this unsatisfactory state of affairs allowed to go on ? Whatever may be the several answers to that question, one principal reason is that the universities want knowledge a good deal on their own terms, which terms have been formulated mostly as a result of the respect people have for the physical or measurement sciences. Such processes as ecstacy, intuition, artistic moods and the like have only incidental interest in universities as aspects of learning. So the whole process is circular. It is, in effect, held that the only knowledge is objective or physical. Then the superphysical is supposed to prove its existence in physical terms, which is a contradiction established at the very start of the inquiry.

Contemporary thought is rapidly altering this situation. It is now held that the subjective is the <u>more</u> real, that matter itself is a mind-process of some sort. The new attitude gains ground slowly. Meantime we may meet the issue simply, with the same simplicity with which it is put.

We turn first to historical developments in Western psychology.

Except for the brief interlude of behaviourism (which is not a philosophy of psychology but a method), psychology by its very nature has provided reason to think states other than these waking states real. <u>Introspective psychology</u> (with which we associate a name like that of William James) taught naively that we could examine ourselves. Whatever consciousness may be, it permits the examination of that which it

is not, including one's own physical and psychic organisms and parts of them. Thus though the emotions might prove to be only dimly perceived glandular or other adjustments (the James-Lange theory), that which perceives is quite simply taken to be other. Depth psychology, especially in its earlier stages (Sigmund Freud) widened this gulf between conscious and unconscious (a term deriving from von Hartmann), and thereby emphasized necessarily the reality of the conscious. The very fact of the supremacy over behaviour of the three or four unconscious complexes, the physical (hunger, etc), vital (sexual, etc., to Freud the principal aspect of the libido), the herd instinct (emotional, especially fear) and the mental vanities (ego complex) makes consciousness conspicuously different. The later depth psychology (C.G. Jung) has made the reality of the soul, the world unconscious, as against the Freudian psyche clearer, and has further fortified while enlarging the notion of the higher self. This is especially true since Jung discovered eastern thought in the form of Chinese psychology (per The Secret of the Golden Flower, trans. by Richard Wilhelm).

Two important phases of psychology contribute more direct evidence of a rich inner life and a basis for firmer belief in independent continuance thereof. Both are really nearly as old as psychology itself is old as a modern science.

First is the psychology of the whole, or the ganzheit view. This movement was accelerated by Ernst Mach, to whom Einstein has owed much in the past. Mach (following von Shrenfels) insisted that one cannot understand a part without some appreciation of the whole. The gestalt element in psychological experience (the truth of a whole, such as a melody, which is made up of parts but is an entity by right of its wholeness) has been expanded in recent years into a wonderful wealth of knowledge. For our present purposes it need only to be said that it is supplying knowledge of parts of the soul (as contrasted with the Freudian psyche), and even some suggestion of ego-as-spirit. The development of this important movement, which is usually attributed to Wertheimer as founder, should be watched by all of us with close attention, for it promises to return us at last to the older notion of man as a physical, psychical, soul-equipped and spiritual being.

Second (in the West) there is psychical research, abnormal psychology or parapsychology. This is the direct evidence required for our purpose. Since J. B. Rhine lifted telepathy into a statistical realm these subjects have taken on new meaning. If man is the possessor of psychic organs of some character, operating in telepathy in a range more subtle than ordinary sense-perception, then a medium for such communication has to be postulated, and the bare possibility at least for whole vehicles in which such psychic organs inhere comes forward for consideration. The psyche may survive death, if it exists, no less than soul and spirit, if they do. Among the earlier great names in parapsychology are Myers, Flammarion, Lodge, Stead, Cookes, James. We must leave for another occasion the evidence provided by the psychology of the East, in which the reality of religious experience as well as its variety is well established. In a future bibliography also will be found reference to the crucial books by Miss Wild and others, bearing upon illumination, intuition (the Hindu buddhi) and other important human resources.

F. Bligh Bond	THROUGH THE GATES OF REMEMBRANCE. Incomparable psychometric record.
R. M. Bucke	COSMIC CONSCIOUSNESS. This extraordinary work has been far too little noticed. A unique discussion of illumination.
Bhagavan Das	THE SCIENCE OF THE EMOTIONS. A rarely lucid account of the yoga psychology in its more normal aspect as a discipline for all, not for the few.
Sigmund Freud) William James) C. G. Jung)	The works of these men may be consulted by those who have yet to acquire established psychological principles. James wrote excellent simple and more advanced textbooks suited to his day,

but VARIETIES OF RELIGIOUS EXPERIENCE represents him well as a thinker. Jung's discussion in THE SECRET OF THE GOLDEN FLOWER and his MODERN MAN IN SEARCH OF A SOUL are important.

Gustave Geley — CLAIRVOYANCE AND MATERIALISATION has considerable value.

A. J. H. Hulme and F. W. Wood — ANCIENT EGYPT SPEAKS. This and its companion books by Wood, AFTER THIRTY CENTURIES and THIS EGYPTIAN MIRACLE are undoubtedly the chief contemporary works in psychic research. The first contains also invaluable references.

C. W. Leadbeater — CLAIRVOYANCE. A clear, simple, brief work.

Oliver Lodge — No serious study of psychical research can omit RAYMOND, OR LIFE AND DEATH and THROUGH PHANTOM WALLS and like books of this, the most distinguished physicist who has tackled psychical research seriously.

Ernst Mach — THE ANALYSIS OF SENSATION. Mach was a highly important influence on thought of this era.

Carl Murchison, Ed. THE CASE FOR AND AGAINST PSYCHICAL RESEARCH. Excellent at its date.

F. W. H. Myers — HUMAN PERSONALITY and its Survival of Bodily Death (two volumes) remains today the classical work of reference in parapsychology as a whole, not because of its argument but the cases cited. See especially the case of Dr. Wiltse.

J. B. Rhine — His EXTRA SENSORY PERCEPTION is the first important contemporary work to bring forward telepathy seriously. See also, however,

Upton Sinclair — MENTAL RADIO.

von Schrenck-Notzing — THE PHENOMENA OF MATERIALIZATION. Fundamental and original.

C. Wertheimer — The usually accepted founder of the Ganzheit psychology.

Richard Wilhelm — The translator of THE SECRET OF THE GOLDEN FLOWER.

GENETICS FOR THE NEW WORLD

". . . . as far as I know, no university department in this country is devoted wholly to the investigation of human genetics. Meanwhile, Britain and Scandinavia have lately encouraged the systematic study of human inheritance. In Uppsala, the Institute of Race Biology (Statens Ras-biologiska Institut) whose director, Professor Gunnar Dahlberg, is chairman of the Swedish Academic Assistance Council for refugee Jewish scholars, is an intellectual bulwark against the spread of race dogmas among the educated section of the community. The influence of J. B. S. Haldane, who is now professor of human genetics in the Galton Laboratory, has been an equally salutary corrective to the prestige of racialist theories in Britain. There is no lack of men in this country with the intellectual gifts to make a center of research like the Uppsals Institute a focal-point of national enlightenment in the United States. One thinks immediately of American-born and world-famed geneticist, Herman Muller now a refugee from European war after several years of active research in Europe. One thinks of Felix Bernstein, now a refugee from the Nazi regime. One thinks of many others. It would not be difficult to recruit a gifted and socially enlightened personnel for an American research institute devoted to human genetics if those who are in a position to contribute the necessary financial support would come forward. I can suggest no project which would do more to eradicate the germs of racialism in our midst. For this is a hopeful circumstance of our own time: When cruelty and intolerance turn to science for rearmament they seize double-edged weapons. There is no Gresham's Law of current coin in the realm of science. The proper remedy for fake science is more genuine scientific knowledge, and more still." (Contemporary Jewish Record, pp 3-12, February, 1941. R. S.)

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AMERICAN PREHISTORY

The New World was apparently peopled by two major migration waves out of Asia. There have been human beings in N. America for approximately 15,000 years. These are among the conclusions stated by Smithsonian Institute ethnologists in a recent stock-taking of North American prehistory.

According to Dr. T. D. Stewart, two different basic stocks were represented in the aboriginal population. --One with long high heads and broad noses which predominated in those sites which were settled first. A broad outline indicates that late in the Pleistocene geologic period there was an ice-free corridor from the Arctic through Canada east of the Rockies, along which bands of hunters penetrate southward. - These probably were the so called Folsom and Yuma men. Later after a long interval other groups came southward west of the Rockies. (Scientific American 164, 152, March, 1941 A. J. P.)

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Dr. John Collier, commissioner of Indian affairs: "When dealing with Indians we need to realize they can teach us more about democracy than we can teach them."

"EVERYBODY TALKIN' 'BOUT HEAVEN AIN'T GOIN' THERE" Is the Subjective Real ?

The torrent of sociological writing which rushes over us all has repeated references to matters psychological and even to matters spiritual, counting them causative in social development. Everyone is greatly concerned about the anti-social use of the non-moral achievements of science. Books are written about religion and society also, lately Goodspeed's work on The Four Pillars of Democracy, Harper 1940, and Loewenstein's, Hitler's Germany, Macmillan, 1940, even though the kinds and uses of religion in these cases are hardly recognizably akin. In the Journal of Social Philosophy, April, 1941, Gardner Williams examines The Subjective Nature of Ultimate Moral Authority.

One would like to feel hopeful at the sight of such concern with morality and values. But upon quiet examination most of this writing turns out to be words. Basic issues are passed by, or treated as if nothing has happened to thought itself---as if we have only to appeal with fresh intentness doubtless, to old standards (and no others) but because of the urgency of the crisis. The most astonishing generalities are offered, completely contradictory to modern tendencies in fields outside social thinking. We may quote a specimen.

"All communication is by signalling from a distance through physical media. Ideas cannot fly through the air from one mind to another. Minds do not meet in the social group. The group mind is mythological. Nor do they meet in the universal. Real universals do not exist and are not needed to explain the principle of universality in some human knowledge. Conceptualism is an entirely adequate doctrine when put into a form consistent with a naturalistic metaphysics. That is, men have inside their minds ideas or concepts whose existence is particular, but which may refer universally to all the members of a class. It is impossible, contrary to popular usage, for two men to have one identical universal, or non-universal, concept in their two minds at one time, or at different times."

These are surely groundless assertions ? Has Extra Sensory Perception no social meaning ? Has the space-time matrix dominion over planets, suns, nebulae and galaxies, but no power over this wonderful, powerful creature, man ? After that there is no occasion for astonishment when Mr. Williams goes on:

"Psychological individualism must be sharply distinguished from moralistic and economic individualism. These latter mean selfishness, or personal independence from social control, or free capitalistic enterprise. Psychological individualism means simply that no two persons can have one experience in common."

This is a natural consequence of his dogmas that "The word experience is synonymous with consciousness. People's minds are separate, and all experience occurs in minds."

Most of the writing about social order and disorder which makes reference to spiritual and moral values gives us a feeling of complete futility. "Everybody talkin' 'bout heaven" certainly cannot take heaven very seriously, nor think the subjective has any real being of its own. Let us assume its reality and see what can be said about the social structure in terms of integrated knowledge drawn from all the great categories of knowledge. We propose, that is, to apply to social thinking the over-riding principles in the sciences, biology, psychology and the physical sciences, in that order.

The biological sciences include palaebiology, the development of planetary life in cycles, the revelation of system and purpose and stages so vast that it over-rides all other considerations, and cannot be defeated, least of all if not perceived. Ignorance of it leads to subjection to it.

The history of the planet shows four epochs, so far: Dominance of minerals, epoch

of supremacy of vegetable life, the era of the vast animals, and finally the current epoch of man. The series is a progressive revelation of the psychic potential, since minerals just exist (being) plants grow and strive (become), animals think and seek (mobility) and man is self-conscious (creative).

This present epoch on the earth therefore is determined by man's nature and needs. In other words, there cannot be a sensible social philosophy which has not recognised the progressive emergence of psychic forces in all the kingdoms and realised that in man the psychic and spiritual is that which nature has determined to express upon a planetary scale, and with all the power she possesses. A social order which does not estimate man correctly as a psycho-spiritual being will fall to pieces. Only those systems which have seen some regard for and approximation to the psycho-spiritual potential have lasted a while. We have only to examine the history of Christian, Buddhist or any culture to see this. Art, thought and material stability all measure up from this factor.

Because these forces on the geological scale work out also into history, however, people make that leap directly to history, and conclude that the Anglo-saxon is dominant (Germans do it too !), because fated, maybe by some outside God. But by failing to study the larger, prior demands of geological epochs, they falsely conclude that the Anglo-saxon is fated to triumph on any terms, however opposed to the larger over-riding requirements of mankind as a whole. The possession of the better cause momentarily by the Allies does not mean that they have met all the requirements of the whole vast human episode in geology.

Therefore we have to examine human nature, as the life-process is going to ensure a triumph for it, as it did for minerals, plants and animals in the past---and that triumph will be for human nature as it is, not as some behaviourist thinks it is.

The main thing is to recognise what human nature is in essence, as an advance over all that has gone before. This essence, if nothing else, is to be satisfied. Until it is satisfied, no peace will come to the planet. Nature will have her way.

That essence is self-consciousness. This is the potential for all the arts, for a conscience, for all spiritual and soul developments.

There is no need to pursue here the details of human psychology, save to say that the West has established, besides the body, three psychic complexes, vital (the libido), the emotional (the herd) and mental (ego). These four, comprising the psychophysiological organism, man shares in various proportions with higher animals. But self-consciousness implies a new sequence superior to the foregoing, perhaps opposite to them. For man is capable of philosophical or generalised thinking, he is capable of intuitions and creations of beauty, and he has some measure of will. This, man's higher self, is just now becoming known from ganzheit psychology, but seers have always perceived it and its powers may be seen with the help of Leibnitz, Plato, Shankaracharya, Buddha, etc.

The ignorant tendency of some modern social operators is to exploit the outer psychological organism as a whole, with dangerous blindness and selfishness, and to ignore the higher. The lonely is already expressed in animals. But the higher is more causal and if it is nature's purpose to express it, no social forces can stand against this will of nature.

Aside from humane considerations, the exploitation of the psyche by the modern advertiser, marketer, paid writer, etc., is limited largely to Freudian elements and backfires constantly and eventually will explode. For the all-over purpose of nature is ego, soul, etc. Besides that, the acutal starvation of the body, along with the frustration of the vital and reproductive forces by delayed marriages and postponed parenthood, the play on passions (fear advertising, sexual appeal, etc.), as against

affections, and the denial of good nourishment to the mind, as well as over-all conflict from insecurities, make an explosive force. Mobs must be seen in these terms.

Thus the true needs of the soul, ego, spirit are surely to be seen and accepted as social ends ? We pass by for the moment constructive needs for leisure and a philosophy of the relation of this world to the next. This is supreme, however, for it gives responsibility and continuity to personal life. This philosophy is old and found in every religion, even Christianity as known today, and it is true to fact. Hence it is not "religion, the opiate of the people", since it leads to social responsibility and not to humble acceptance of suffering nor to arrogant assumptions of superiority and the right to rule.

But we must repeat that if these forces be not recognised and the needs met no society can be built up. A doctrine that the masses don't want anything better, won't use leisure rightly, so give them the radio comic, the comic strip and the strip tease, is against evolution on the geologic scale. It is wishful thinking. It is often cynical and even criminal planning against mankind. Nature will force the issue, and will break down any number of social structures till she gets her spiritual ends for man---for Nature does not fear death on a large scale. Her interest is in the final expression of that which she has planned, and the death of a thousand cultures is nothing to her.

When the over-all forces of biology and psychology are recognised, we are ready to inquire into the over-riding physical science laws as they apply to economics. Classical economics has always been a strange mixture of the artificial and the natural. But today a clearance is proceeding. It is time to get back to fundamentals chartered by nature. Human nature and biological nature are a goodly part of the whole, but laws seen in physics and chemistry are, so to speak, ruthless firsts and musts. Frederick Soddy and Silvio Gesell have made good studies of the relation of the second thermal law to interest on money, and realism about currency. Such pioneers were before their time, but today we can read their writings with special profit. In this one law of physics there is latent a complete revolution in economic thinking. We shall pursue the physical science aspect of our discussion at a later date.

F. K.

THE BODY PHYSIOLOGIC AND POLITIC — Man and His Fellows

/The following remarks are extracted from the Address of the retiring president of the American Association for the Advancement of Science, Philadelphia, December 27, 1940, See also the author's book, The Wisdom of the Body. Dr. Walter B. Cannon is a pioneer in the study of psychobiology. His original work in the ductless glands, especially on the adrenals, is classical. He is the George Higginson Professor of Physiology, Harvard Medical School./

"At this bewildering time, ... it is pertinent to inquire whether we might seek and find a social organization which would yield more of the benefits of security than we now enjoy . . . . In the relations among men in civilized nations there are many harrowing uncertainties. . . . . Under such stressful conditions masses of men may be led into precipitate and violent action. . . . . Yet there are values we would not lose in the effort to gain greater stability of social organization. . . . A social order assuring not security alone, not freedom alone, but both security and freedom, is the desirable goal." . . . . "If we examine any social or industrial group we note that it presents two sorts of relations, internal and external. . . . ." "Observe that states of stability and instability in the nation, in industries and in homes are closely linked. . . . ."

"For purposes of later discussion it is pertinent to note at this point that in the functional organization of our bodies there are relations and activities which can be distinguished as external and internal. . . . . Our external activities are directed towards modifying our surrounding, or changing our position with regard to them--. . . . It is the function of the internal activities of the organism to prevent or correct . . alterations and maintain stability, ..."

"Wonderment over the maintenance of steady states in the human organism increases when we consider that we are composed of substances that are in the highest degree instable and are commonly responsive to extremely slight modifying influences. . . . . We should observe, furthermore, that . . stability is manifest not only in adulthood but also in the early decades when the body is undergoing a manifold increase of size. . . . . Here is an outstanding achievement, the result of evolutionary processes during immeasurable eons of past time. We are warranted in examining this supreme triumph of organization by nature for possible light on present defects of organization by man."

"The most important device which enables our bodies to preserve steady states, ... is the constant character of the circulating fluids. We exist, therefore, not in the air which surrounds us--we are separated from that by a layer of inert material. We exist in a fluid matrix which provides us each with a private internal environment. . . ." ". . . . Regulatory processes slip into action and preserve in the fluid matrix a relatively constant state. So characteristic is this constancy, and so peculiar are the processes which maintain it, that it has been given a special name, homeostasis," "In so far as materials are concerned steady states are assured by storage in times of plenty and release from storage in times of need. . . . ." ". . . ., The responsible organs of the body react to any disturbing condition as if they were directed towards preserving a steady state in the internal environment."

"A final notable feature of bodily organization is the special favoring of certain organs when internal conditions take an unfavorable turn. Of these the brain and the heart are the two most privileged. . . . . In starvation . . , heart and brain are spared while other structures are slowly consumed." . . . "Mention of the favored treatment of the brain makes pertinent at this point an interpretation of the significance of physiological homeostasis. It is a condition which in the course of organic evolution has been only slowly acquired . . . . When higher vertebrates, . . .acquired a constant temperature and other constancies . . . when the functions of the body were . . . liberated from disturbing or limiting conditions, what is the advantage that was gained? The answer is . . that homeostasis has released for the exercise of their peculiar services the higher functions of the brain."

". . . . as we have just seen, our bodies, by the evolution of a self-regulated internal economy have become to a high degree liberated from deranging external influence. Can this sort of liberty be achieved in human society? . . . . It may be that our bodies, which are the culmination of ages of experience, have learned secrets of management that are worthy of our study. . . . ."

"The resemblance between the body biologic and the body politic has long attracted the interest of philosophers, biologists and historians. Among sociologists, economists and men of affairs, however, the analogies have been largely discredited, because, it is said, the comparisons have not contributed to the understanding of social structure. . . . . , analogies may be instructive if, instead of a comparison of structural details, there is inquiry into relative functional accomplishments in the physiological and social organization." A physiologist "finds that, despite inherent structural instability and despite constant exposure of unstable organic stuff to powerful destructive forces, an almost incredible steadiness has been achieved. Are not the principles exemplified in the workings of our bodies sufficiently fundamental to have social applications?"

"Might not the outstanding achievement of bodily homeostasis, the means of which have been revealed by fairly recent discoveries be indicative of ends to be sought,

and the means of attaining them, in social evolution?"

". . . . The unscrupulous demagogue grasps for power and becomes a menace because he knows that the needy are not free; . . . . For any democratic society this situation is not without peril. . . . . It is foolhardy to be smug and self-satisfied and disdainful of efforts to establish a more perfect social justice. As remarked before, human society is in the process of evolution, and probably is in what will be regarded as an early stage of that process."

(R. S.)

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RECENT CHANGES IN WORK-RELIEF WAGE POLICY — Arthur E. Burns & Peyton Kerr

Recent changes in WPA policy have been substantiated. The relief act of 1939 required that regional differences in monthly earnings should be based on differences in cost of living. "Cost of living" may refer to the income needed to maintain (1) a uniform level of living, or (2) the actual levels of living that prevail in different regions. The new WPA wage schedule, revised in accordance with a qualified cost-of-living concept raised the national average approximately $2.50 a month. Substantial increases were made in unskilled earnings in the South with only small changes elsewhere.

The 1939 act also established a uniform work month of 130 hours, thus abandoning the prevailing-hourly-wage policy. This provision has increased efficiency in various respects. Changes in work-relief wage policy have been associated with shifts in the distribution of emphasis between the work and relief aspects of such program. In recent years, a growth in legislative determination of wage and hour policy has accompanied increasing emphasis upon the efficient accomplishment of useful work. (The American Economic Review, March, 1941, pp. 56-66 R. S.)

* * *

LET THE CHILDREN RUN

"In the interests of the best possible health for the coming generation, we can no longer excuse a sedentary program in schools. The physical organisms of children were never evolved to fit days at school desks. In our northern winters the hours of ten to two on sunny days should certainly be spent outdoors at vigorous activities. Teachers will have to do more and more teaching on hikes, in games, on excursions, in the field, around camp fires and on mountain trails. Those who cannot take the more strenuous pace would have to be replaced by a new type of youth leader." (Progressive Education, February, 1941, Vol. XVIII, No. 2 p. 95. R. S.)

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". . . . , The Main function of this volume is to place in the hands of the teacher a catalogue of the better 16mm. films. Over six hundred 16mm. films were evaluated. . . . . Only two hundred.. were regarded as worthy of inclusion . . . These in turn were subjected to a rating and classified as fair, good, or excellent-- . . . . The present volume deals with films prior to 1940." (Review by Theodore L. Nydahl, in The Journal of Geography, January, 1941, of William H. Hartley, Selected Films for American History and Problems, 275 pp. Bureau of Publications, Teachers College, Columbia University, New York, 1940. $2.25.)

"For many years magnetic storms at irregular intervals have been known to interfere seriously with the operation of electrical communication systems. The storm of March 24, 1940, however, considered to be possibly the greatest magnetic storm that has ever been recorded, not only interfered widely with communications systems, but also caused numerous interruptions in electric-power systems. The latter experiences are reviewed here, followed by some notes on current theories concerning magnetic storms."

". . . . The present discussion is a brief summary of power-system experience with some notes on the general subject of magnetic storms and the theories that have been advanced to explain them. For the latter, the author is indebted to Doctor A. G. McNish of the department of terrestrial magnetism, Carnegie Institution of Washington and particularly to the material he prepared for presentation before a recent meeting of the engineering committees of the Edison Electric Institute. . . . ."

"For the purpose of explaining what happened in the power systems, I shall refer chiefly to the New York system, for which an extensive analysis has been made. It was noted that: "1. There had been voltage dips of short duration and considerable magnitude." "2. There had been increases in reactive kilovolt-amperes coincident with the voltage dips and proportionate to them." "3. There had been no appreciable change in the power components, that is, in kilowatt load." "These phenomena were, at least qualitatively, what would be expected if direct currents flowed in the windings of transformers so as to cause saturation and lead to increased a-c magneticizing currents."

"H. B. Seeley of Consolidated Edison Company, has made a number of calculations in which he has used test data showing the effect of superimposed direct currents on transformer characteristics and has made the assumption of an earth-potential gradient of ten volts per mile. He also used in his calculations the known electrical characteristics of typical feeders on the radial distribution system. The result is a calculated increase of 26.4 reactive megavolt-amperes compared with an observed 25--a convincing argument as to the validity of explanation."

"In seeking further light on the underlying phenomena involved in the magnetic storm, we may next turn to the data collected by the Bell Telephone system. Like the telegraph companies, telephone companies have long been aware of magnetic storms and have taken steps to place instruments so that records of their currents could be obtained. . . . ." "From an analysis of their records, it is known that potential differences of 400 volts or more occurred between numerous line terminals. . . . ." "Analysis of the data obtained during this particular storm confirms earlier observations which show that the largest potential gradients occurred in areas known to have high earth resistivity. . . . ."

"Coming now to the matter of a more fundamental explanation of the nature of the magnetic storms, we find that we enter a field of speculation in spite of the enormous mass of exact scientific data that has been accumulated during the past century or more." Some idea of the magnitude of the continual changes in the earth's magnetic field not only from day to day but hour to hour "may be gained from Doctor McNish's calculation that during the great magnetic storm of April 1938, energy was expended at the rate of 2,000,000,000 KW for a two-hour interval. The storm of two years later appears to have been even more intense so it is not surprising that there were effects even on power systems of 2,000,000 KW connected capacity."

"To quote from Doctor McNish: 1. ". . . . The field changes may be divided into classes--those which are symmetric about the earth's magnetic axis and those which are nonsymmetric. The first class may be thought of as due mainly to a large ring current about the earth, like the rings of Saturn, or to a current flowing in the outer atmosphere with intensity varying as the cosine of the geomagnetic latitude from zero at

the geomagnetic poles to a maximum at the equator. The inferences we may draw from magnetic observations are entirely ambiguous in this regard for they permit either possibility. If the ring current is the correct conception its radius may be several times that of the earth. During the first phase of a magnetic storm the current in this ring flows from west to east and during the main or second phase it flows from east to west; the magnitude of the current reaches several million ampheres at its maximum during great magnetic storms. Although the greater part of the energy of magnetic storms is involved in this hypothetical ring current, the magnetic changes are not rapid enough to induce the very high potentials within the earth which play havoc with electrical systems."

"The second class of field changes, which are nonsymmetric about the earth's geomagnetic axis, are associated with electric currents flowing with maximum intensity along the auroral zone. There is every assurance that these currents are confined to our atmosphere, probably at a height of about 100 kilometers or so, where radio observations and auroral phenomena attest that the atmosphere is highly ionized. Field changes arising from these currents are responsible for the effects on communication and power lines."

"Observation . . . . has permitted mapping of typical current-circulations. In general, these consist of intense currents flowing in a east-west direction along the auroral zone with diffuse return circulations--also confined to the atmosphere--across the polar cap and in low latitudes. Westward currents predominate on the morning side of the earth and eastward currents on the afternoon side, the westward currents being in general more intense. . . . . The strength of these auroral-zone currents may exceed 1,000,000 amperes and changes exceeding 100,000 amperes in one minute have been observed. Although the path may be 100 miles or so in width, to a first approximation it may be regarded as confined to a vast trolley-wire stretching for hundreds of miles in an east-west direction at a height of about 100 miles above the earth."

"The cause of the primary electric currents in the outer atmosphere or about the earth remains a matter of speculation. We know definitely that solar activity is directly responsible for magnetic storms--magnetic storms vary in frequency with the sun-spot cycle and exhibit a quasi-periodic effect which is associated with the sun's rotation."

"1. Magnetic Storms. A. G. McNish. Edison Electric Institute Bulletin, volume 8, July, 1940, pages 361-4."

(Electrical Engineering, February, 1941, pp 72-75. Digest by R. S.)

SHRINKING GLASS

Glass is a curious substance. It is not a crystal. In a crystal the atoms are symmetrical about a point. In glass the arrangement is not symmetrical, yet it is geometrical. A diagram of the theoretical structure in this paper shows the atoms in an orderly arrangement of interlocked spirals. These researches into the structure of glass have borne fruit in a new and remarkable variety. It is of great value for chemical work, and is called "preformed glass". The dish or bowl, after treatments with heat and acid, shrinks to two-thirds its former size ! Its shape is retained exactly. It is now very largely silica, yet paradoxically it is still glass ! It is extremely tough and may be heated cherry red and plunged in water without breaking.
(Based on "Glassy Geometry", by Bertram E. Warren, Technology Review, April, 1941,
B. L. W.)

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". . . . For English is not logical and formal as we have always thought. Its grammar has a pattern but that pattern is not nicely symmetrical like the grammar of dead languages. It is sprawling, unpredictable and spontaneous, like the minds of people who use it. 'English has in general developed along lines determined by the human characteristics of the eager, lazy, undecided, arbitrary, partial, modest and arrogant persons who have spoken and written the language during the many centuries which have gone into its making.'"

". . . . The effect of human behavior, inwardly and outwardly, has, and will probably continue to have, a strong influence on vocabulary inflections, spelling, pronunciation and syntax, for the growth of English grammar is 'psychological and can be understood only by psychological interpretation.'"

(Elizabeth Goepp Scanlan, Queens College, in The Quarterly Journal of Speech, February, 1941, reviewing 'Psychology of English, by Margaret M. Bryant and Janet Rankin Aiken, New York: Columbia University Press, 1940, pp 229. $2.50. The incorporated quotations are from the book itself. R. S.)

* * *

A COLOR STANDARD

". . . Select an odd color from the many in the room where you are sitting. Quite obviously it is blue or green or red and also it is light, medium or deep. From this point it becomes more difficult until, as Stevenson found, it is nearly impossible to describe a color so that another person would understnad it readily.

"Of course there are numerous popular names for special fashion colors that have come into everyday use, Suntan, coral, porphyry, periwinkle, elephant's breath and many, many others which, when once seen, can readily be approximately recalled. This of course depends on both parties having the same original conception of the color. Little success would attend any effort to match another person's idea of a color if one of these names were given without any supporting data.

"The problem began to bother the scientists years ago and a great many systems of color definition and arrangement appeared from time to time.

"A very workable notation of colors was provided about 1910 by Professor A. H. Munsell and amplified by his Color Atlas a few years later. This system is so readily understandable and so well arranged to provide space for every conceivable color that it became the recognized standard in many fields where color plays an important part.

"Each color has three attributes: Hue - That attribute of certain colors by which they can be classified as reds, greens, blues, yellows, purples, etc. White, black and grays are not considered as being hues. Lightness or Munsell Value - Brilliance. That attribute of any color or visual sense quality in respect to which it may be classed as equivalent to some member of a series of grays ranging from black to white. Saturation or Munsell Chroma. The degree to which any color possessing a hue differs from a gray of the same brilliance.....

"In the work of the League (The American Artists Professional League), under the grant from the Carnegie Corporation of New York, on paints and other artist's materials, it is necessary to have some means of adequately expressing various colors. The Munsell system has been chosen as presenting the greatest value for this work, on account of its inclusion of every possible color, its simplicity and its direct showing of the color in the Book of Color. Future references to any color in connection with the work of the League will be in the nomenclature of Judd and Kelly and will include the Munsell notation..." (The Art Digest, April 1, 1941. Digest by R.D.B.)